Dan

DESIGN DEVELOPMENT INC.

MODEL 100R-5

CAL PROCEDURES & DRAWINGS

AUGUST 1986

DESIGN DEVELOPMENT, INC.

MODEL 100R-5 CALIBRATION PROCEDURES

1) INITIAL TURN ON
2) POWER SUPPLY CHECK
3) OSCILLATOR CAL
4) RETURN LOSS TRANSMITTER CAL.
5) RECEIVER LEVEL CAL
6) RECEIVER NOISE CAL
7) RECEIVER RETURN LOSS CAL.
8) MISCELLANEOUS CIRCUIT CHECK

TEST EQUIPMENT REQUIRED:-

1) OSCILLOSCOPE
2) DVOM
3) 600 OHM ATTENUATOR-BALANCE
4) TTS MODEL 100R4
5) 1 MILLIWAT REFERENCE GENERATOR
6) AC VOLT METER-HP MODEL 403B
7) DC POWER SUPPLY
8) 600 OHM RESISTOR, 0.1%
9) 900 OHM RESISTOR, 0.1%
10) 2.16 uF CAPACITOR, 1%

1.0) SECTION 1 - INITIAL TURN ON

1.1) VISUAL INSPECTION:-INSPECT THE UNIT CAREFULLY, CHECK IF ANY COMPONENTS ARE MISSING. SOLDER BRIDGES, CAPACITORS, DIODES, AND I.C.'S ARE LOADED IN THE RIGHT MANNNER.

1.2) SET DVOM TO RESISTANCE, CHECK ALL THE TIP TRANSISTORS AND VOLTAGE REGULATORS (ON TRANSMITTER BOARD) ARE NOT SHORTED TO THE HEAT-SINK.

1.3) MID-RANGE ALL POTS.

1.4) USING THE DVOM, CHECK ACROSS CAPACITORS C608, C606, AND C604. OBSERVE THAT THERE IS NO SHORT ACROSS ANY OF THEM.

2.0) SECTION 2 - INITIAL TURN ON.

2.1) USE POWER INPUT COMMON AS REFERENCE, MONITOR THE COLLECTOR OF Q605 WITH THE SCOPE. SET THE VERTICAL GAIN TO 20V/DIV, AND HORIZONTAL SWEEP TO 10 MS/DIV.

2.2) ADJUST DC POWER SUPPLY TO -48 VOLTS, AND CONNECT IT TO THE POWER INPUT OF THE UNIT UNDER TEST.

2.3) TURN POWER ON. OBSERVE THAT A CLEAN SQUARE WAVE OF 80 VOLTS PEAK TO PEAK APPEAR ON THE SCREEN, AND THE FREQUENCY IS AROUND 20K HZ. CHECK THE INPUT CURRENT SHOULD BE AROUND 280 MILLIAMPS. ADJUST THE VALUE OF R604, AND/OR R603 IF NECESSARY.

2.4) SET DVOM TO DC VOLTS, AND MONITOR ACROSS C608, CHECK THE VOLTAGE SHOULD READ -15V +/-.3V.

2.5) MONITOR ACROSS C606, THE VOLTAGE SHOULD READ +15V +/.3V.

2.6) MONITOR ACROSS C604, THE VOLTAGE SHOULD READ +5V +/-.2V.

3.0) SECTION 3 - OSCILLATOR CALIBRATION

3.1) PATCH THE 100R5 SEND TO THE TTS 100R4 RECEIVE AND SELECT SETTING AS FOLLOWS:

100R5 TRANSMITTER SWITCH
- a) NORM
- b) 600 OHM
- c) VAR-OSC LEVEL, AND
- d) VAR-OSC FREQUENCY (100HZ TO 4KHZ)

100R4 RECEIVER SWITCH
- a) 600 OHM
- b) TERM
- c) LEVEL

3.2) TURN POWER TO ON IN BOTH UNITS, AND ADJUST VAR FREQUENCY CONTROL IN THE FRONT PANEL ALL THE WAY COUNTER CLOCKWISE, ADJUST R352 TO READ 90 HZ ON THE TTS 100R4.

3.3) TURN THE VAR FREQUENCY CONTROL ALL THE WAY CLOCKWISE, THE FREQUENCY SHOULD READ ABOVE 4KHZ.

3.4) SELECT 404 ON THE 100R5, AND ADJUST R355 TO READ 404.

3.5) SELECT 1004 ON THE 100R5, AND ADJUST R357 TO READ 1004.

3.6) SELECT 2804 ON THE 100R5, AND ADJUST R358 TO READ 2804.

3.7) SELECT 1004, AND ADJUST VAR LEVEL SO THE METER READS 0.0 DBM. SELECT DBRN, C-MSG AND 1010 NOTCH FILTER ON THE 100R4, ADJUST R360 AND R359 TO READ BELOW +30 DBRN. CHECK 3KHZ AND 15KHZ TO READ BELOW 35 DBRN.

3.8) RECHECK STEPS 3.3 TO 3.6.

3.9) SELECT 1004 ON THE 100R5, AND ADJUST VAR LEVEL ALL THE WAY CLOCKWISE. ADJUST R391 TO READ 10.3 DBM. ADJUST VAR LEVEL ALL THE WAY COUNTERCLOCKWISE, THE LEVEL SHOULD READ BELOW -40.2 DBM.

3.10) SELECT 0 DBM, AND ADJUST R368 TO READ 0.0 DBM.

3.11) CHANGE FREQ TO VAR, AND 1004 HZ, ADJUST R375 TO READ 0.0 DBM ON THE METER.

3.12) SELECT -16 DBM, AND ADJUST R369 TO READ -16.0 DBM.

3.13) CHANGE LEVEL TO VAR, ADJUST IT TO READ 0.0., CHANGE VAR FREQ SETTING TO 4 KHZ TO 20 KHZ, ADJUST VAR FREQ CONTROL ALL THE WAY COUNTERCLOCKWISE, THE FREQUENCY SHOULD READ BELOW 4 KHZ, AND ALL THE WAY CLOCKWISE, THE FREQUENCY SHOULD READ ABOVE 22 KHZ. OBSERVE THAT THE LEVEL SHOULD NOT CHANGE MORE THAN 0.2 DBM, AND REPEAT THE STEP WITH THE VAR LEVEL SET AT +9.0 DBM, THE LEVEL SHOULD NOT CHANGE MORE THAN 0.2 DBM.

3.14) SELECT 0 DBM AND 1004, AND CHANGE TO 900 OHM ON BOTH 100R5 AND TTS 100R4 ADJUST R392 TO READ 0.0 DBM ON THE METER.

4.0) SECTION 4 - RECEIVER CALIBRATION-LEVEL

4.1) PATCH 100R5 RECEIVE TO 100R4 SEND, AND SETUP THE EQUIPMENTS AS FOLLOWS:-

100R5 RECEIVER
- a) 600 OHM
- b) TERM
- c) LEVEL, AND
- d) L/N

100R4 SEND
- a) 600 OHM
- b) 1004, AND
- c) VAR LEVEL

4.2) MONITOR ACROSS C31 WITH THE DVOM AND SET IT TO READ DCV. INCREASE THE 100R4 LEVEL OUTPUT TO APPROXIMATELY +3.5 DBM SO THAT THE DVOM READS 4.000 VOLTS. INTRODUCE 12 DB OF ATTENUATION, AND ADJUST R67 TO READ 1.004 VOLTS. REPEAT THE ABOVE STEP FOR PROPER TRACKING.

4.3) INCREASE LEVEL SO THE 100R5 DISPLAYS +4.0 DBM, INTRODUCE 13 DB OF ATTENUATION, ADJUST R81 TO READ +9.0. REPEAT THE PROCESS FOR PROPER

TRACKING. CHECK TRACKING ALL THE WAY TO -50.0, OBSERVE THAT THE DISPLAY WILL BLANK BELOW -50.0 DBM EXCEPT THE MINUS SIGN, AND WILL BLANK ABOVE +15.0 DBM EXCEPT THE PLUS SIGN.

4.4) PATCH THE REFERENCE GENERATOR (600 OHM) TO THE RECEIVE INPUT OF THE 100R5, ADJUST R7 TO READ 0.0. SWITCH BOTH 100R5 AND REFERENCE GENERATOR TO 900 OHM, AND ADJUST R8 TO READ 0.0 DBM.

4.5) PATCH THE 100R5 SEND TO THE 100R5 RECEIVE INPUT, AND ADJUST 100R4 TO SEND 0.0 DBM AT 1004 HZ TO THE 100R5, SLOWLY SWEEP THE SEND FREQUENCY FROM 100 HZ TO 20 KHZ, CHECK THAT THE 100R5 SHOULD READ WITHIN +/-0.2 DB.
*SELECT A CAPACITOR ACROSS R33 OR R34 IF NECESSARY.

4.6) SET THE METER TO READ 0.0 DBM, AND 1004. SELECT BP (0.2-5 KHZ), ADJUST R248 TO READ 0.0. CHECK THE -3DB POINT AT 200 HZ AND 5 KHZ.

4.7) SLOWLY SWEEP THE FREQUENCY TO 10 KHZ, OBSERVE THE FREQUENCY DECIMAL WILL CHANGE TO 10 HZ RESOLUTION AS THE FREQUENCY EXCEED 10 KHZ. SLOWLY DECREASE THE SEND FREQUENCY, OBSERVE THAT THE DECIMAL WILL CHANGE BACK TO 1 HZ RESOLUTION BELOW 9.000 KHZ.

5.0) SECTION 5 - RECEIVER NOISE CALIBRATION.

5.1) PATCH THE 100R4 SEND TO THE 100R5 RECEIVE INPUT. AND SETUP EQUIPMENTS AS FOLLOWS:-

100R4 SEND
- a) 600 OHM
- b) VAR LEVEL, AND
- c) VAR FREQ

100R5 RECEIVE
- a) 600 OHM
- b) TERM, AND
- c) C-MSG FILTER

5.2) SET 100R5 SEND TO -0.4, AND 1004 HZ. ADJUST R35 SO THE READING OF THE METER JUST CHANGE FROM +89 TO +90 DBRN. SET LEVEL TO 0.0 DBM, AND CHECK THE FILTER FREQUENCY RESPONSE AGAINST THE TABLE BELOW:-

FREQ	READING	TOLERANCE
200	+65	+/-2
400	+79	1
700	+87	1
1000	+90	0
1500	+89	1
2800	+88	1
3500	+82	2
5000	+61	3

5.3) SELECT 3KHZ FILTER, AND 15 KHZ FILTER AND CHECK THEM AGAINST THE TABLE BELOW:-

3KHZ FILTER

FREQ	READING	TOLERANCE
400	+90	+/-1
1000	+90	0
3000	+87	1

15KHZ FILTER

FREQ	READING	TOLERANCE
400	+90	+/-1
1000	+90	0
3000	+90	1
15000	+87	1

5.4) SET FREQUENCY TO 1004, AND SELECT C-MSG FILTER, CHECK TRACKING TO 0 DBRN, ADJUST R23 IF NECESSARY TO READ PROPER WHEN BELOW +10 DBRN. CHECK TO SEE THAT WHEN BELOW +0 DBRN THE DISPLAY WILL BLANK EXCEPT THE MINUS SIGN, AND WHEN ABOVE +95, THE DISPLAY WILL BLANK EXCEPT THE PLUS SIGN

5.5) SET UP THE EQUIPMENT AS FOLLOWS:-

100R4 SEND
- a) 600 OHM
- b) 0 DBM, AND
- c) 1004

100R5 RECEIVE
- a) 600 OHM
- b) TERM
- c) 3KHZ FILTER, AND
- d) NOTCH

5.6) ADJUST R217 AND R228 TO OBTAIN THE LOWEST READING (BELOW +30 DBRN). CHANGE FREQUENCY TO 404 HZ, ADJUST R211 TO READ +90 DBRN.

5.7) INCREASE FREQUENCY TO 862 HZ, ADJUST R205 TO READ +87 OR +88 DBRN.

5.8) INCREASE FREQUENCY TO 1182 HZ, ADJUST R239 TO READ +87 OR +88 DBRN.REPEAT STEPS 6.7 AND 6.8 FOR PROPER READINGS.

5.9) CONNECT THE TIP OUTPUT OF THE 100R4 SEND TO PIN 8 OF THE TS-1 CONNECTOR OF THE 100R5, AND THE RING OUTPUT TO BOTH THE TIP AND RING RECEIVE INPUT OF THE 100R5. ADJUST SEND LEVEL TO 0.0 DBM AND 1004 HZ, SELECT C-MSG AND NOISE N/G (NO 1010 HZ NOTCH FILTER). THE METER SHOULD READ +90. DECREASE LEVEL TO -40 DBM, THE METER SHOULD READ +50. INCREASE THE LEVEL TO +15 DBM, THE METER SHOULD READ +105.

5.10) USE A JUMPER, SHORT PIN 11 OF U28 TO GROUND. CHECK THAT THE FREQUENCY READOUT WILL DISPLAY THE PROPER FREQUENCY.

6.0) SECTION 6 - MISCELLANEOUS CIRCUIT CHECKS.

6.1) SELECT 600 OHM, 0 DBM, AND 1004 ON THE SEND, AND 600 OHM, TERM, AND LEVEL ON THE RECEIVE SELECT DISP, AND ADJUST R395 (TRANSMITTER BOARD) TO READ 0.0.

6.2) SELECT NORM/XFR SWITCH, CHECK NOW THE SEND BECOMES REC, AND THE REC BECOMES SEND.

6.3) SET THE DVOM TO MILLIAMP DC, AND CONNECT IT IN SERIES WITH THE 600 OHM RESISTOR, SEND OUTPUT AND THE -48 VOLT POWER SUPPLY. SELECT HOLD SWITCH, OBSERVE THE DVOM SHOULD READ AROUND 25 MA. REPEAT THE SAME STEP FOR THE RECEIVE INPUT.

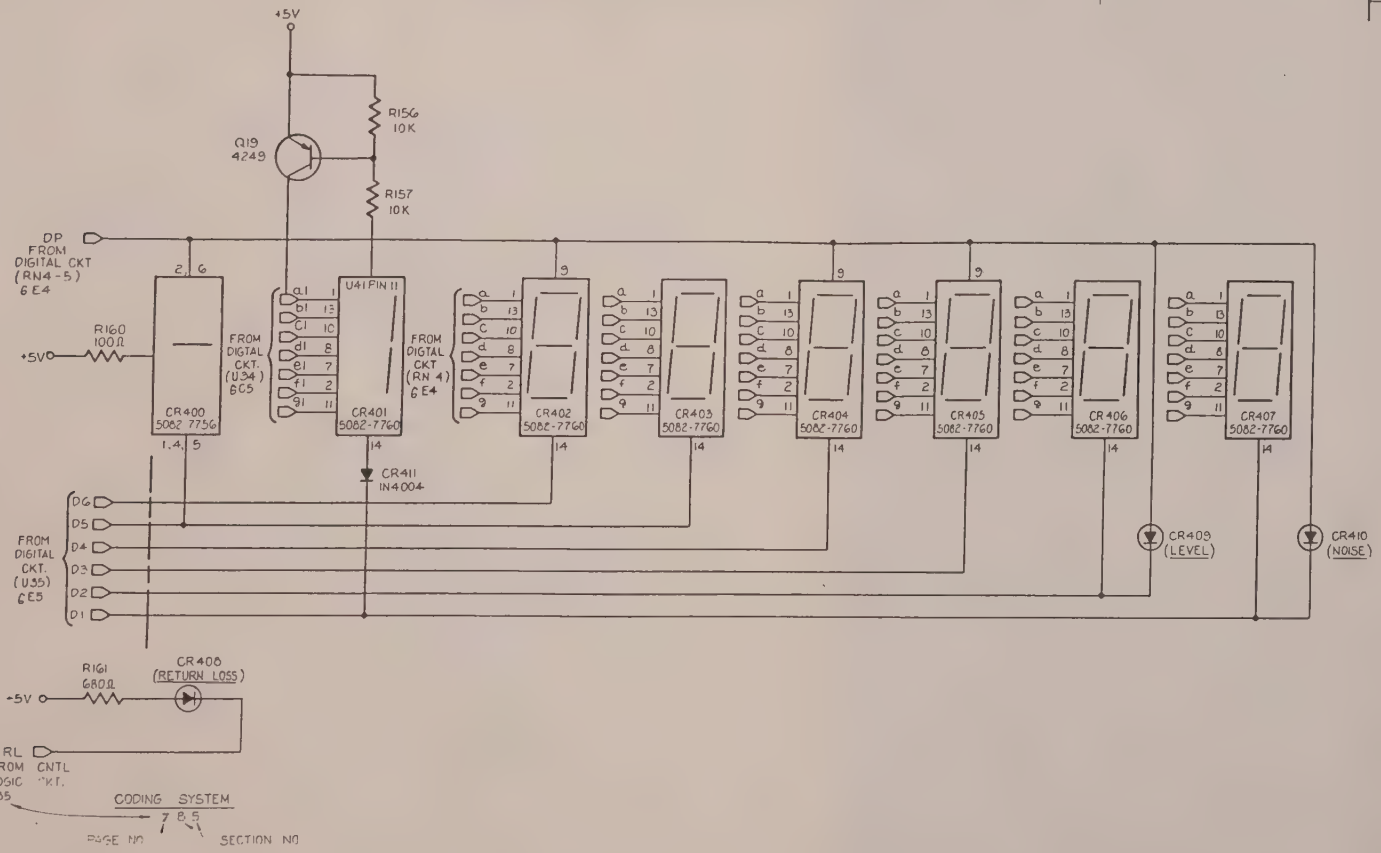
6.4) SELECT S/R DIAL. USING THE DVOM, CHECK THAT THE RECEIVE TIP AND RING SHOULD CONNECT TO THE TIP AND RING OF THE DIAL OUTPUT.

6.5) MONITOR PINS R AND S OF TS-1 WITH A SCOPE. CHECK FOR GOOD AUDIO OUTPUT. TURN THE VOLUME CONTROL ON THE FRONT PANEL TO CHECK AUDIO.

6.6) CONNECT 100A-3 TO PINS 6 AND 7 OF TS-1 CONNECTOR, CHECK THE SERIAL DISPLAY FOR PROPER OPERATION. ALSO CHECK POSITION SERVE STRAPPING OPTION.

6.7) SEAL ALL POTS.

-END-



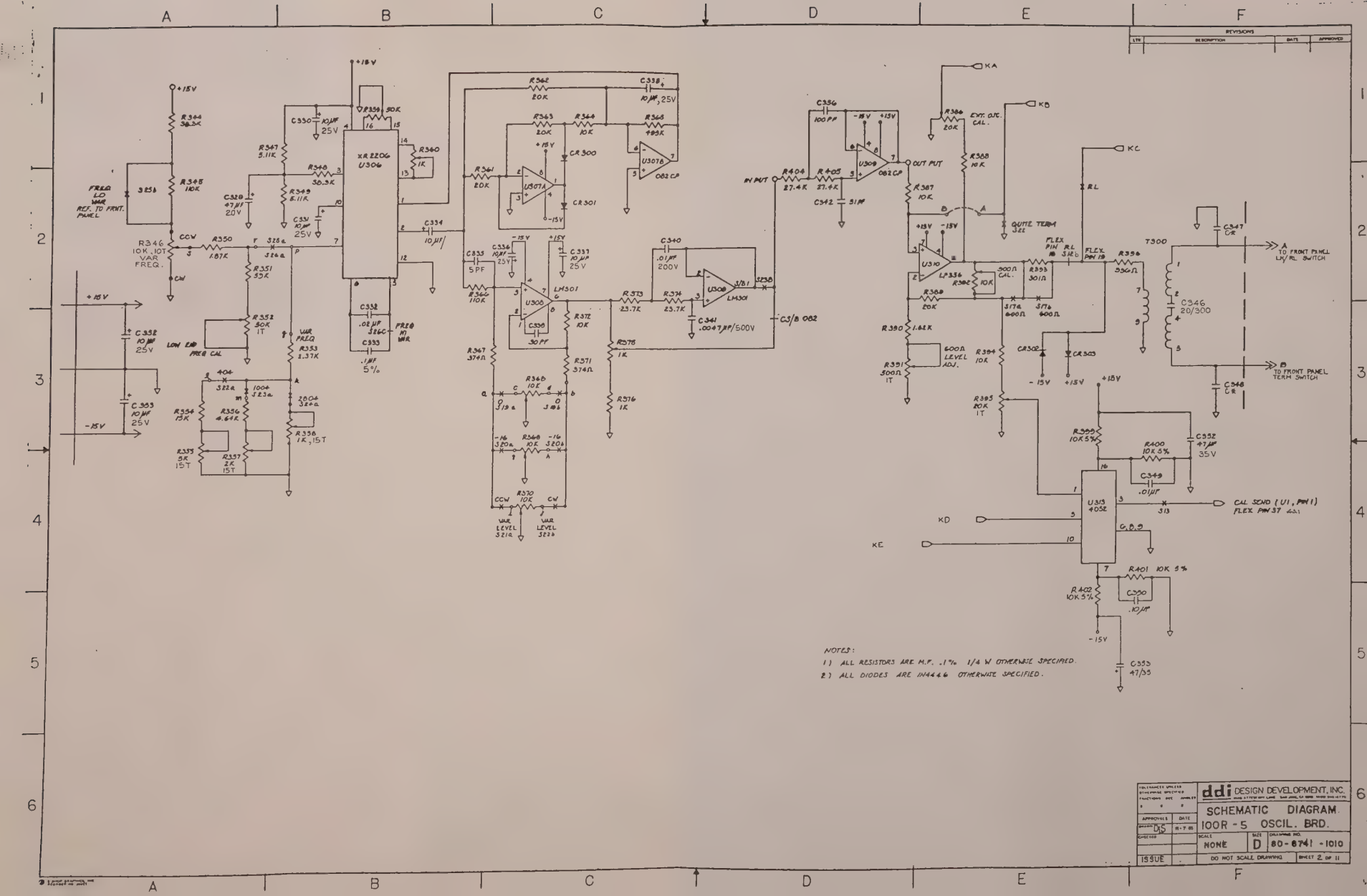
NOTE:

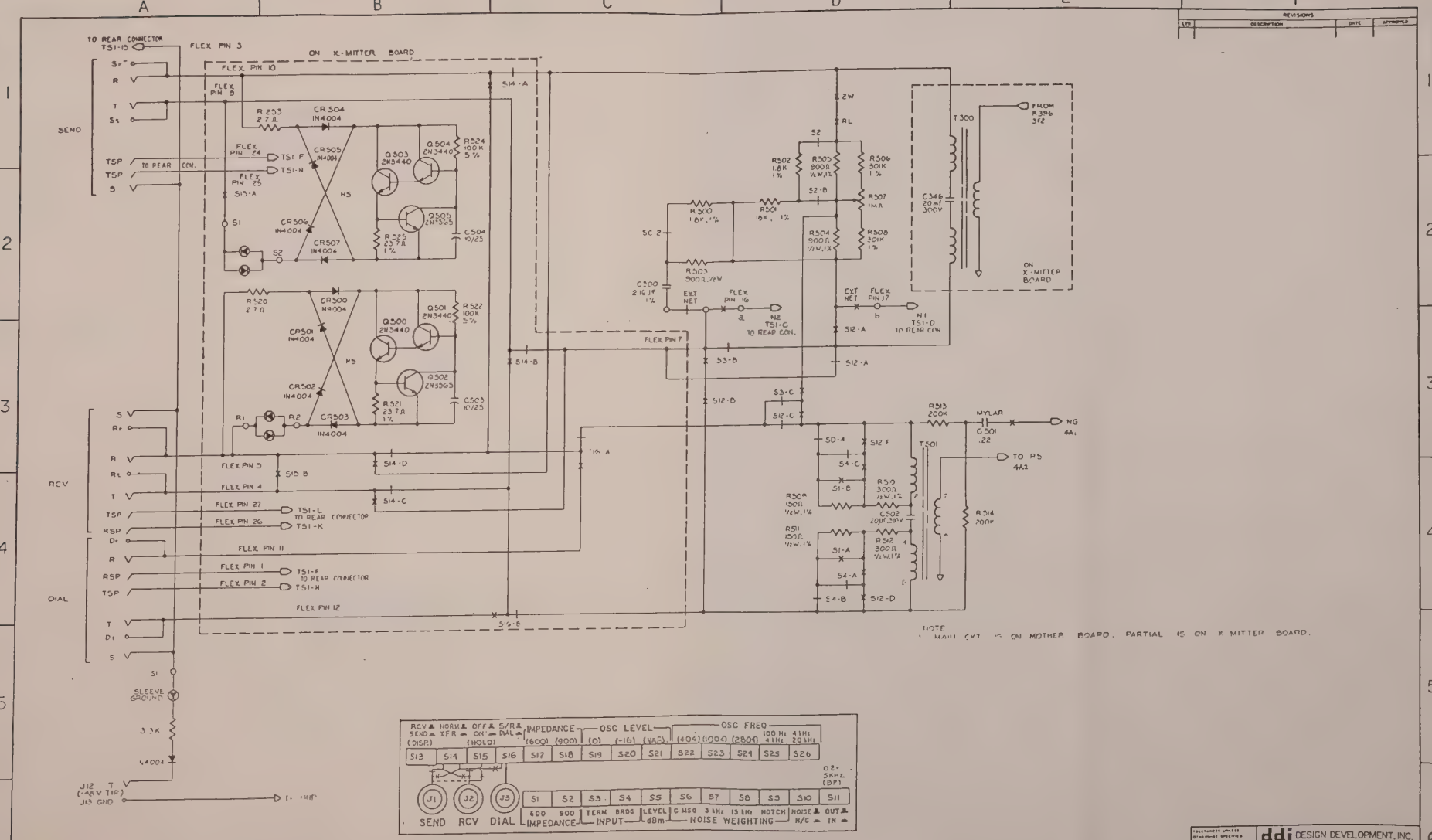
1. ALL CONNECTORS TO PAGE 6.

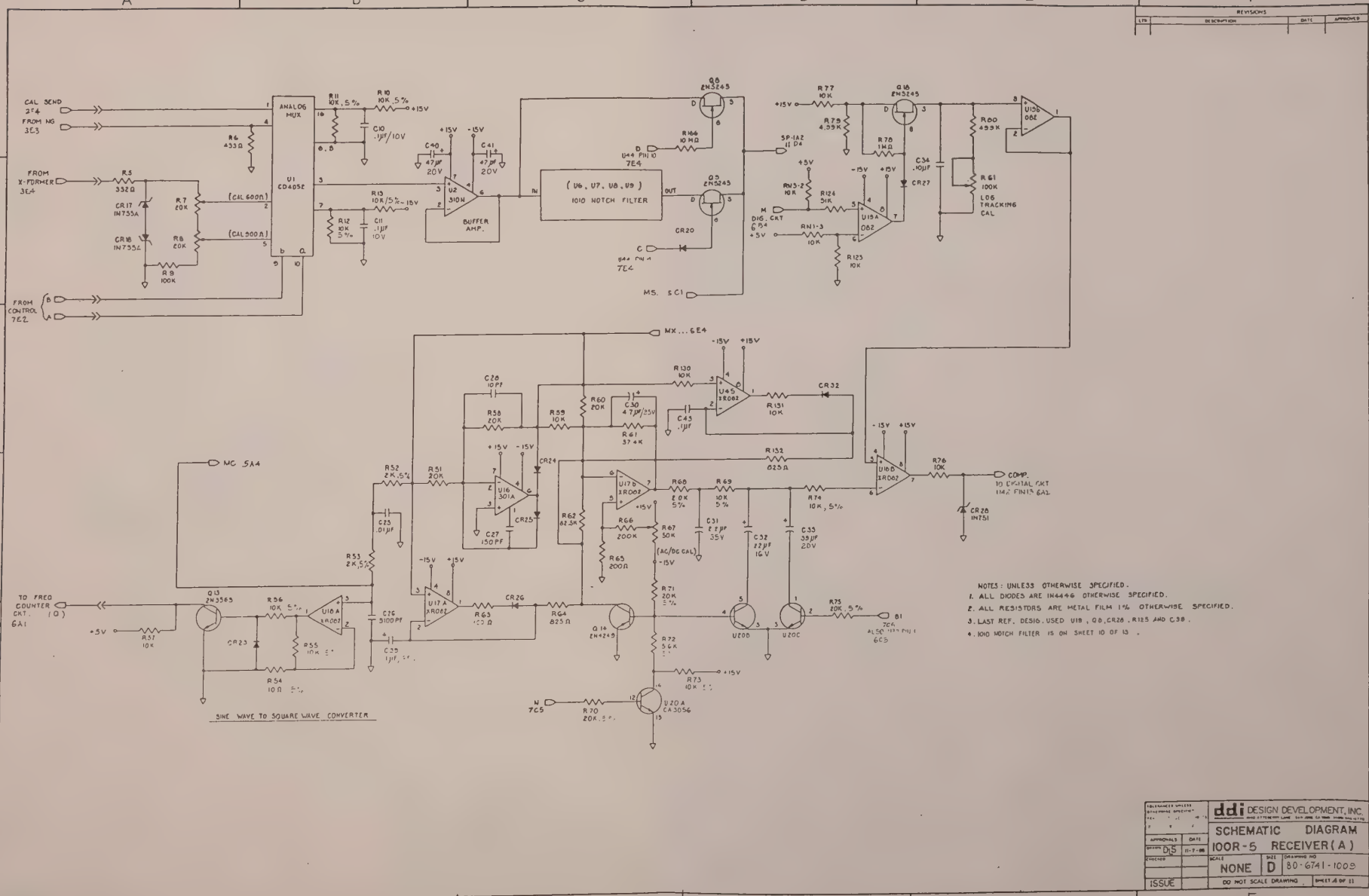
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONS DEC ANGLES ± ± ±	ddi DESIGN DEVELOPMENT, INC. 1440 ATTEBERRY LANE SAN JOSE, CA 95131 (408) 946-6776		
APPROVALS / DRAWN DLS 4-22-86 / CHECKED	SCHEMATIC DRAWING 100R-5 DISPLAY CKT.		
ISSUE	SCALE NONE	SIZE C	DRAWING NO 80-6741 -1011
	DO NOT SCALE DRAWING		SHEET 1 OF 11

BISHOP GRAPHICS, INC


REVISIONS
LTR DESCRIPTION DATE APPROVED
+15V
-15V
R346 10K 10T VAR FREQ.
FREQ LO VAR REF. TO FRNT. PANEL
R344 30.2K
R345 10K
R347 5.11K
R348 30.3K
R349 5.11K
R350 1.87K
R351 35K
R352 50K 1T
R353 2.37K
R354 15K
R355 4.64K
R356 1K, 15T
R357 2K 15T
R358 1K, 15T
R359 20K
R360 1K
R361 20K
R362 20K
R363 20K
R364 10K
R365 +99K
R366 110K
R367 374Ω
R368 10K
R369 1K
R370 10K
R371 374Ω
R372 10K
R373 23.7K
R374 23.7K
R376 1K
C330 10μF 25V
C331 10μF 25V
C332 .02μF 326C
C333 .1μF 5%
C334 10μF
C335 5PF
C336 10μF 25V
C337 10μF 25V
C338 10μF, 25V
C339 47μF 20V
C340 .01μF 200V
C341 .0047μF/500V
C342 51PF
C343 10μF 25V
C344 10μF 25V
C345 .01μF
C346 20/300
C347 CR
C348 CR
C349 .01μF
C350 .10μF
C351 47/35
C352 47μF 35V
C353 10μF 25V
CR300
CR301
CR302
CR303
U307A
U307B 082 CP
U308 LM301
U309 082 CP
U310 LF356
U313 4052
T300
LOW END FREQ CAL
VAR FREQ
FREQ IN VAR
OUT PUT
IN PUT
EXT. OUT. CAL.
QUITE TERM
FLEX PIN 18
FLEX PIN 19
300Ω CAL.
600Ω LEVEL ADJ.
R394 10K
R395 20K 1T
R396 10K 5%
R399 10K 5%
R400 10K 5%
R401 10K 5%
R402 10K 5%
KA
KB
KC
KD
KE
RL
A TO FRONT PANEL LW/RL SWITCH
B TO FRONT PANEL TERM SWITCH
CAL SGND (U1, PIN 1) FLEX PIN 37
C3/B 082
NOTES:
1) ALL RESISTORS ARE M.F. .1% 1/4 W OTHERWISE SPECIFIED.
2) ALL DIODES ARE IN4446 OTHERWISE SPECIFIED.
ddi DESIGN DEVELOPMENT, INC.
SCHEMATIC DIAGRAM
100R-5 OSCIL. BRD.
SCALE NONE
SIZE D
DRAWING NO. 80-8741-1010
DO NOT SCALE DRAWING
SHEET 2 OF 11
ISSUE


TO REAR CONNECTOR TS1-13
FLEX PIN 3
ON K-MITTER BOARD
FLEX PIN 10
SEND
RCV
DIAL
TO REAR CON.
R 233 2.7Ω
CR 504 IN4004
CR505 IN4004
CR506 IN4004
CR507 IN4004
Q503 2N3440
Q504 2N3440
Q505 2N3565
R324 100K 5%
R325 237Ω 1%
C504 10/25
R520 2.7Ω
CR500 IN4004
CR501 IN4004
CR502 IN4004
CR503 IN4004
Q500 2N3440
Q501 2N3440
Q502 2N3565
R522 100K 5%
R521 237Ω 1%
C503 10/25
R1
R2
FLEX PIN 24
FLEX PIN 25
FLEX PIN 4
FLEX PIN 27
FLEX PIN 26
FLEX PIN 11
FLEX PIN 1
FLEX PIN 2
FLEX PIN 12
TS1-F
TS1-H
TS1-L
TS1-K
TO REAR CONNECTOR
SLEEVE GROUND
3.3K
4004
J12 T (-44V TIP)
J13 GND
2W
RL
S2
R502 1.8K 1%
R505 900Ω ½W 1%
R506 301K 1%
R507 1MA
R504 900Ω ½W 1%
R508 301K 1%
R500 1.8K 1%
R501 15K 1%
R503 900Ω ½W
C300 .216 1%
EXT NET
FLEX PIN 16
TS1-G TO REAR CON.
EXT NET
FLEX PIN 17
TS1-D TO REAR CON
T300
FROM R396 3FE
C346 20 mf 300V
ON X-MITTER BOARD
S12-A
S3-B
S12-B
S3-C
S12-C
R513 200K
MYLAR C301 .22
NG 4A1
TO R5 4A2
T501
R510 300Ω ½W 1%
R509 150Ω ½W 1%
C502 20μF 35V
R511 150Ω ½W 1%
R512 300Ω ½W 1%
R514 200Ω
S12 F
S4-C
S1-B
S1-A
S4-A
S4-B
S12-D
S14-A
S14-B
S14-C
S14-D
S15 B
S15-A
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
J1
J2
J3
SEND RCV DIAL
RCV NORM OFF S/R
SEND XFR ON DIAL
(DISP) (HOLD)
IMPEDANCE (600) (900)
OSC LEVEL (0) (-16) (VAR)
OSC FREQ (404) (1004) (2804) 100 Hz 4 kHz 4 kHz 20 kHz
S13 S14 S15 S16 S17 S18 S19 S20 S21 S22 S23 S24 S25 S26
02-5KHZ (DP)
600 900 IMPEDANCE
TERM BRDG INPUT
LEVEL dBm
C MSG 3 kHz 15 kHz NOISE WEIGHTING
NOTCH
NOISE N/G
OUT IN
FRONT PANEL SWITCHING
NOTE
1. MAIN CKT IS ON MOTHER BOARD. PARTIAL IS ON X MITTER BOARD.
REVISIONS
LTR DESCRIPTION DATE APPROVED
ddi DESIGN DEVELOPMENT, INC.
SCHEMATIC DIAGRAM
100R-5 FRONT SWITCH CK.
SCALE NONE
SIZE D
DRAWING NO 80-6741-1009
DO NOT SCALE DRAWING
SHEET 3 OF 11
ISSUE



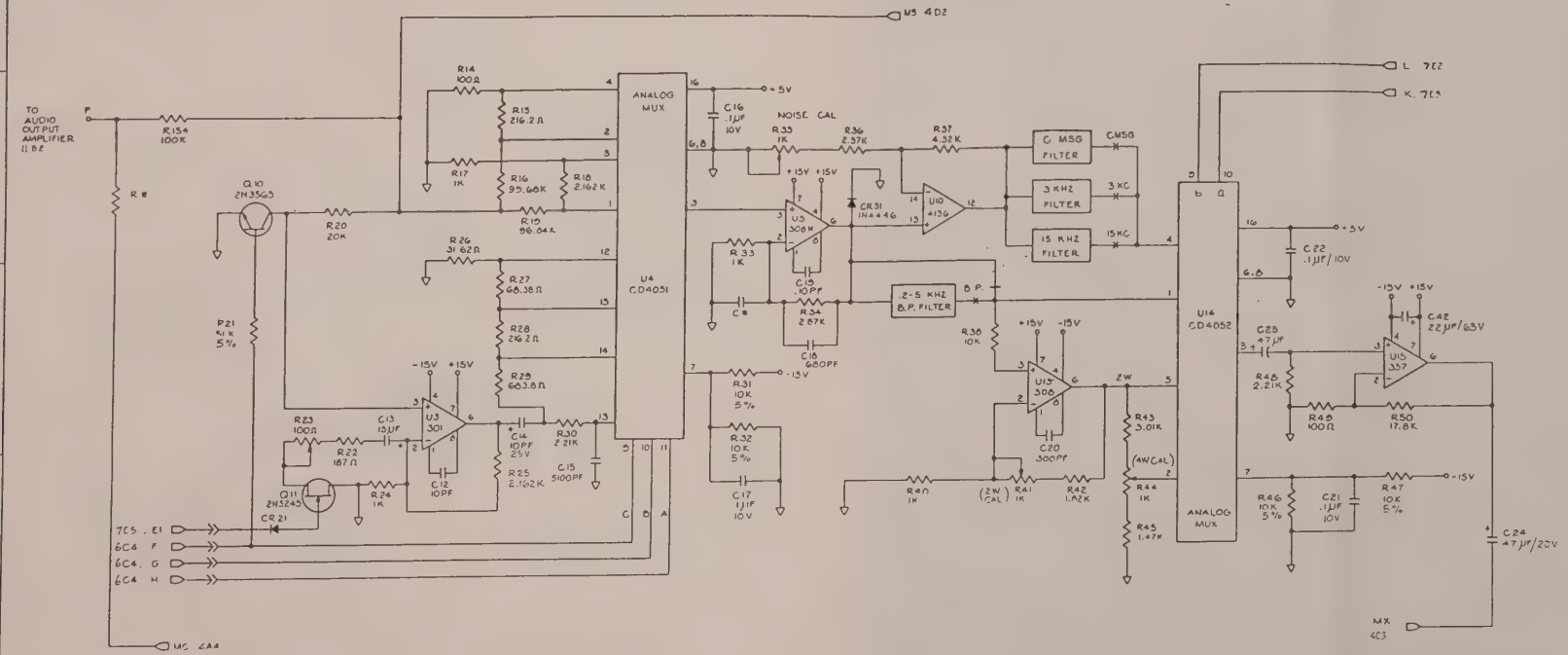
NOTES: UNLESS OTHERWISE SPECIFIED.

1. ALL DIODES ARE IN4446 OTHERWISE SPECIFIED.
2. ALL RESISTORS ARE METAL FILM 1% OTHERWISE SPECIFIED.
3. LAST REF. DESIG. USED U18, Q8, CR28, R135 AND C38.
4. 1010 NOTCH FILTER IS ON SHEET 10 OF 13.

REVISIONS

LTR	DESCRIPTION	DATE	APPROVED

APPROVALS	DATE	ddi DESIGN DEVELOPMENT, INC.	
DRAWN DJS	11-7-08	SCHEMATIC DIAGRAM	
CHECKED		100R-5 RECEIVER (A)	
ISSUE		SCALE NONE	SIZE D DRAWING NO 80-6741-1009
		DO NOT SCALE DRAWING	SHEET 4 OF 11



NOTES

1 ALL DIODES ARE IN4446 OTHERWISE SPECIFIED

2 ALL RESISTORS ARE METAL FILM 1% OTHERWISE SPECIFIED

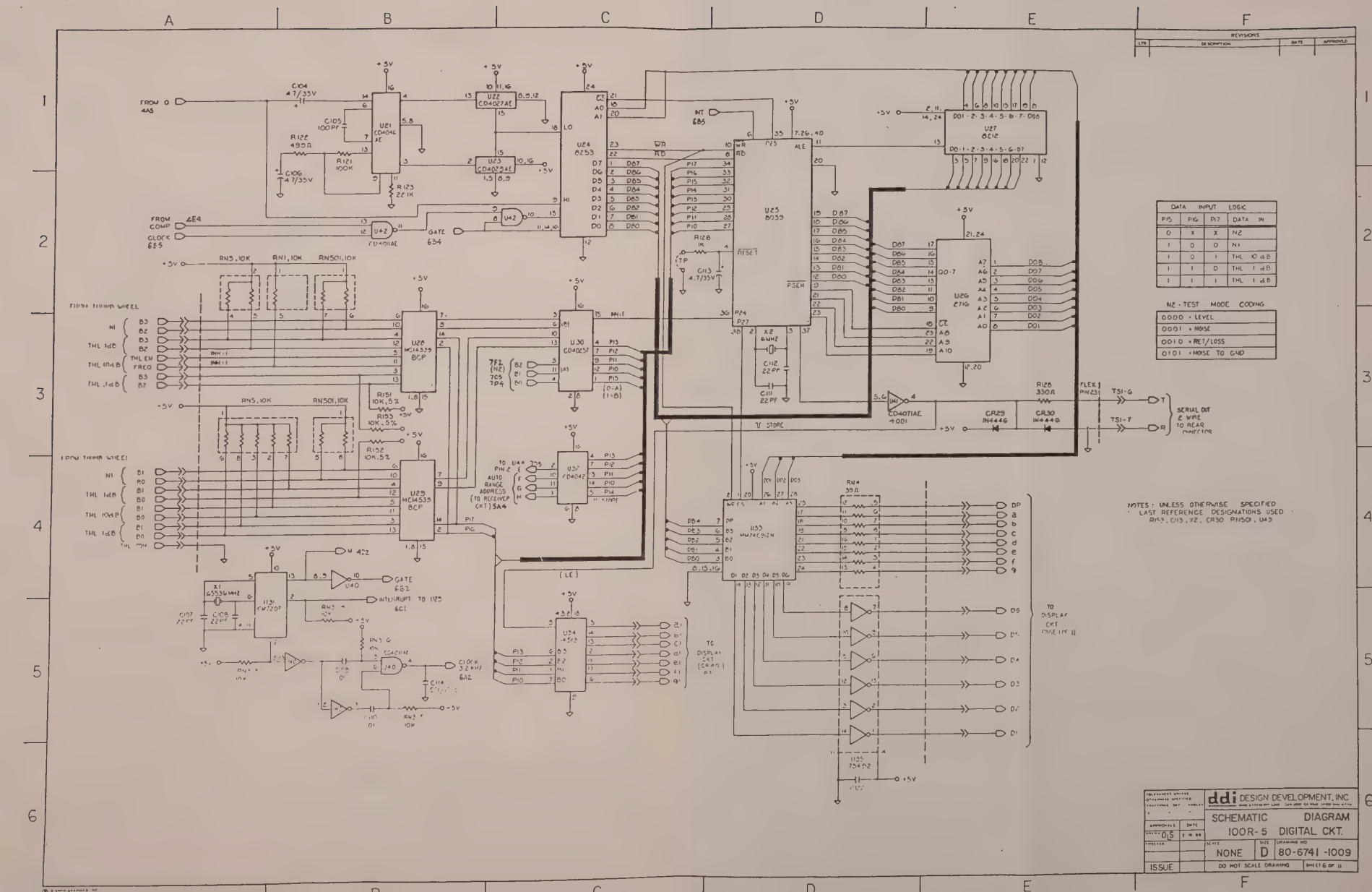
3 LAST REF DESIG USED U9, Q8, CR28, R125, AND C35.

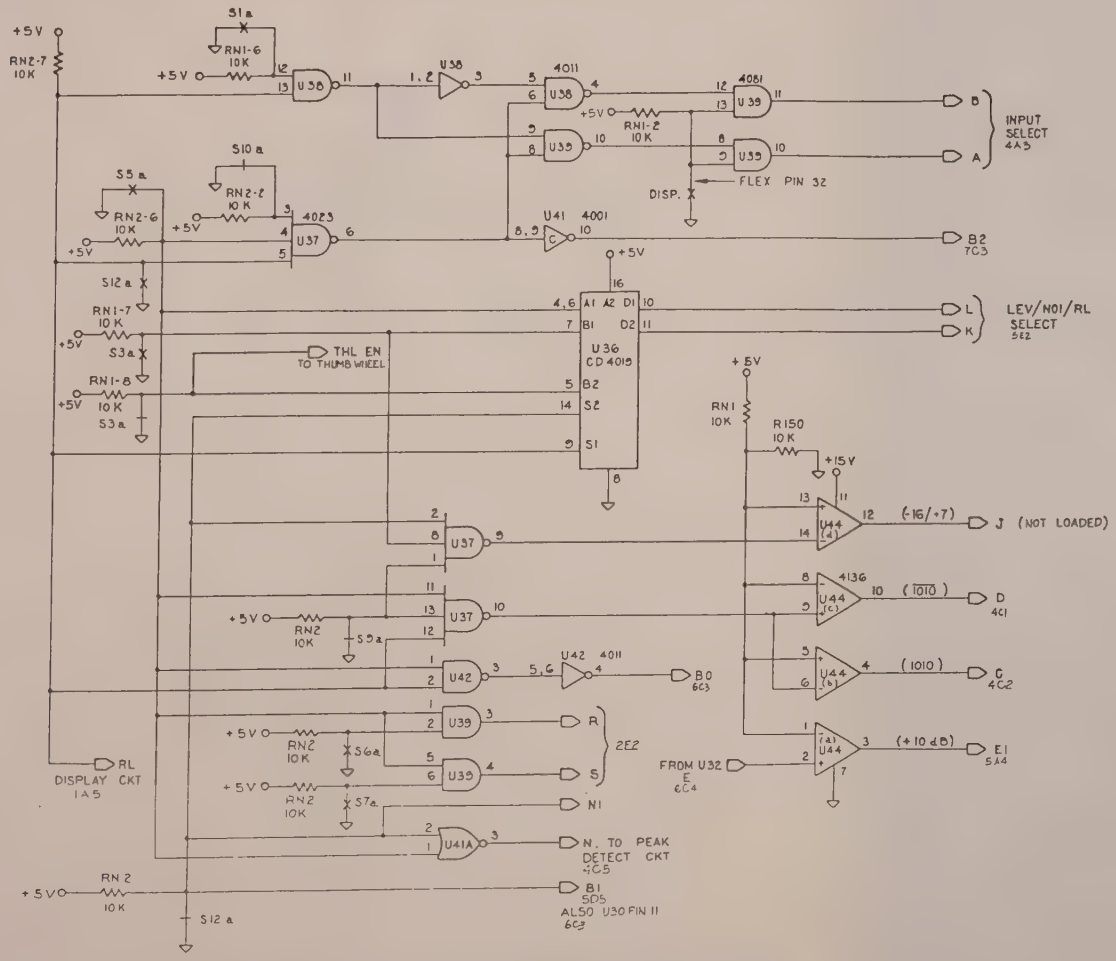
4 CMSG FILTER, 3 KHZ LAT FILTER, 15KHZ LAT FILTER CKT. ARE ON SHEET 8 OF 11.

5 .2-5 KHZ B.P. FILTER CKT IS ON SHEET 3 OF 11.

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

APPROVALS	DATE	ddi DESIGN DEVELOPMENT, INC.	
DRAWN DS	11-8-89	SCHEMATIC DIAGRAM	
CHECKED		100R-5 RECEIVER (B)	
ISSUE		SCALE NONE	SIZE D DRAWING NO 30-6741-1009
		DO NOT SCALE DRAWING	SHEET 5 OF 11


REVISIONS
LTR | DESCRIPTION | DATE | APPROVED
DATA INPUT LOGIC
P15 | P16 | P17 | DATA IN
0 | X | X | NZ
1 | 0 | 0 | N1
1 | 0 | 1 | THL 10 dB
1 | 1 | 0 | THL 1 dB
1 | 1 | 1 | THL 1 dB
NZ-TEST MODE CODING
0000 = LEVEL
0001 = NOISE
0010 = RET/LOSS
0101 = NOISE TO GND
NOTES: UNLESS OTHERWISE SPECIFIED
LAST REFERENCE DESIGNATIONS USED
R153, C113, X2, CR30 PIN501, U43
ddi DESIGN DEVELOPMENT, INC
SCHEMATIC DIAGRAM
100R-5 DIGITAL CKT.
SCALE NONE
SIZE D
DRAWING NO 80-6741-1009
ISSUE
DO NOT SCALE DRAWING
SHEET 6 OF 11



REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED

TOLERANCES UNLESS OTHERWISE SPECIFIED FRACTIONS DEC ANGLES ± ± ±	ddi DESIGN DEVELOPMENT, INC. 1460 ATTEBERRY LANE SAN JOSE, CA 95131 (408) 946-6770
APPROVALS / DRAWN D|S 1-13-84 / CHECKED / ISSUE	SCHEMATIC DIAGRAM 100R-5 CONTROL LOGIC CKT.
	SCALE NONE · SIZE C · DRAWING NO. 80-6741-1009
	DO NOT SCALE DRAWING · SHEET 7 OF 11

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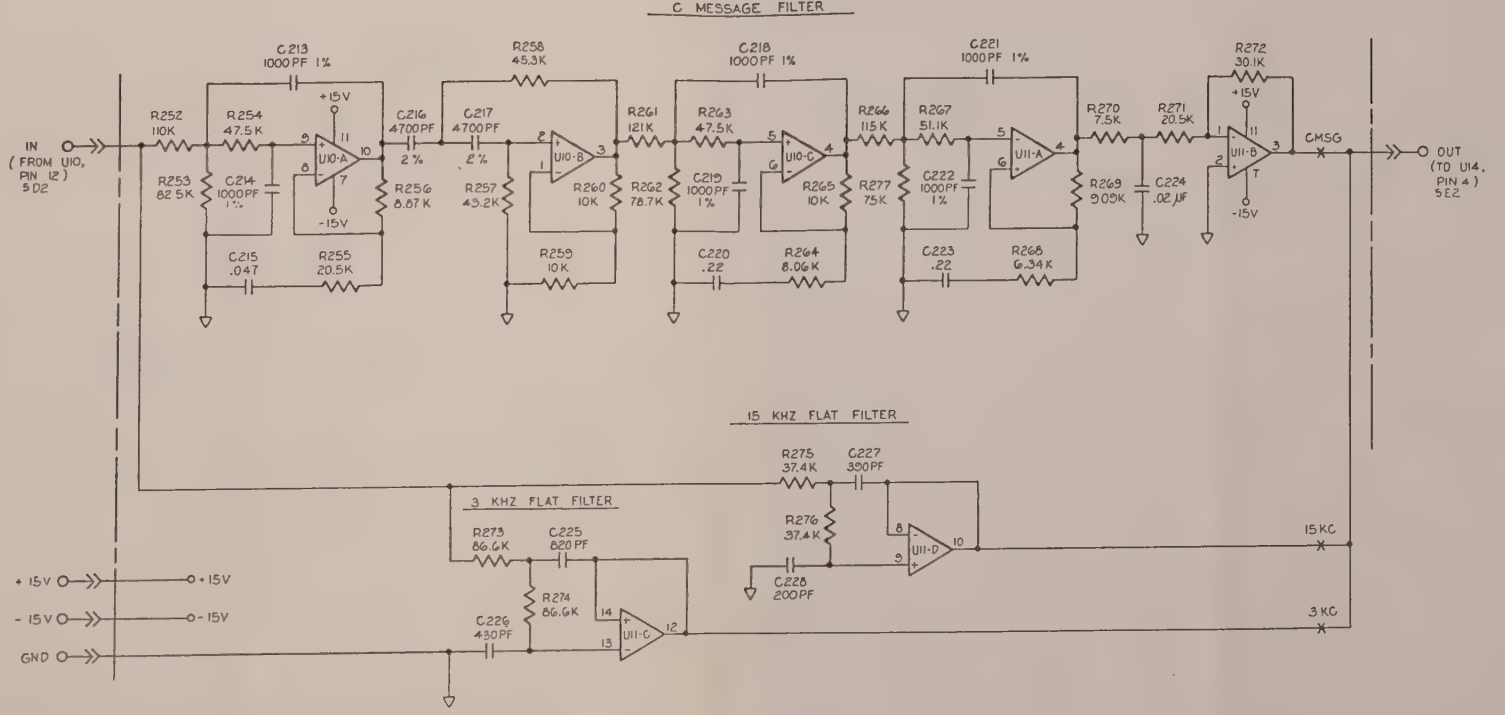
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



NOTES: UNLESS OTHERWISE SPECIFIED.
1. ALL RESISTORS ARE MF. (METAL FILM) 1%.
2. ALL OPERATIONAL AMPLIFIERS ARE S/B 4136

TOLERANCES UNLESS OTHERWISE SPECIFIED		
FRACTIONS	DEC	ANGLES
±	±	±

APPROVALS	DATE
DRAWN DJS	4-18-86
CHECKED	
ISSUE	

ddi DESIGN DEVELOPMENT, INC.
1440 ATTEBURY LANE · SAN JOSE, CA 95131 (408) 946-6770

SCHEMATIC DRAWING
100R-5 FILTER CKT.

SCALE	SIZE	DRAWING NO.
NONE	C	80-6741-1009

DO NOT SCALE DRAWING — SHEET 8 OF 11

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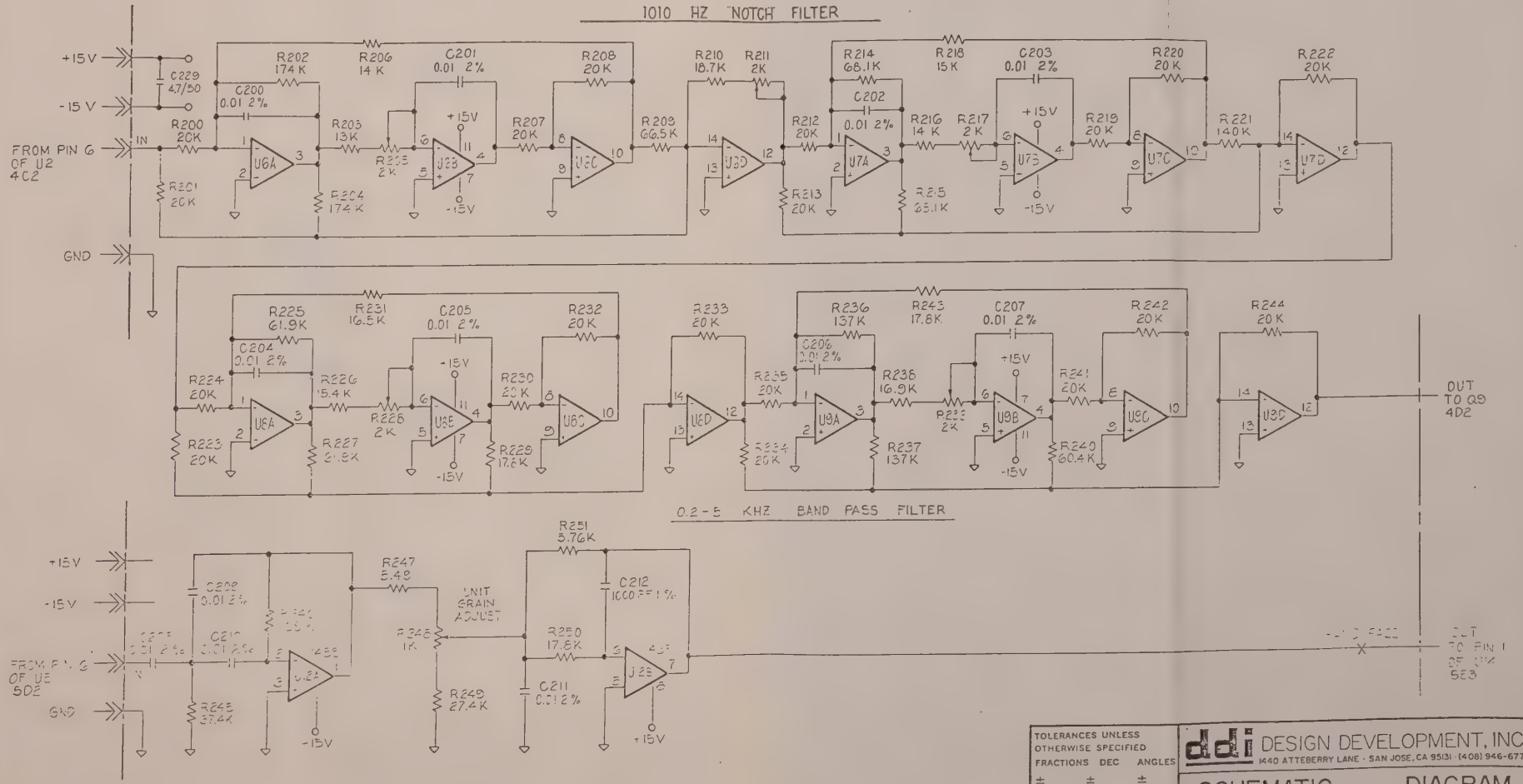
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



NOTES:
1. ALL RESISTORS ARE METAL FILM 1/4W, 1%
2. ALL OPERATIONAL AMPLIFIERS ARE RC4136 UNLESS OTHERWISE SPECIFIED.
3. U6, U7, U8, AND U9 = UA4136PC.

TOLERANCES UNLESS OTHERWISE SPECIFIED		
FRACTIONS	DEC	ANGLES
±	±	±

APPROVALS	DATE
DRAWN DLS	2-21-86
CHECKED	
ISSUE	

ddi DESIGN DEVELOPMENT, INC.
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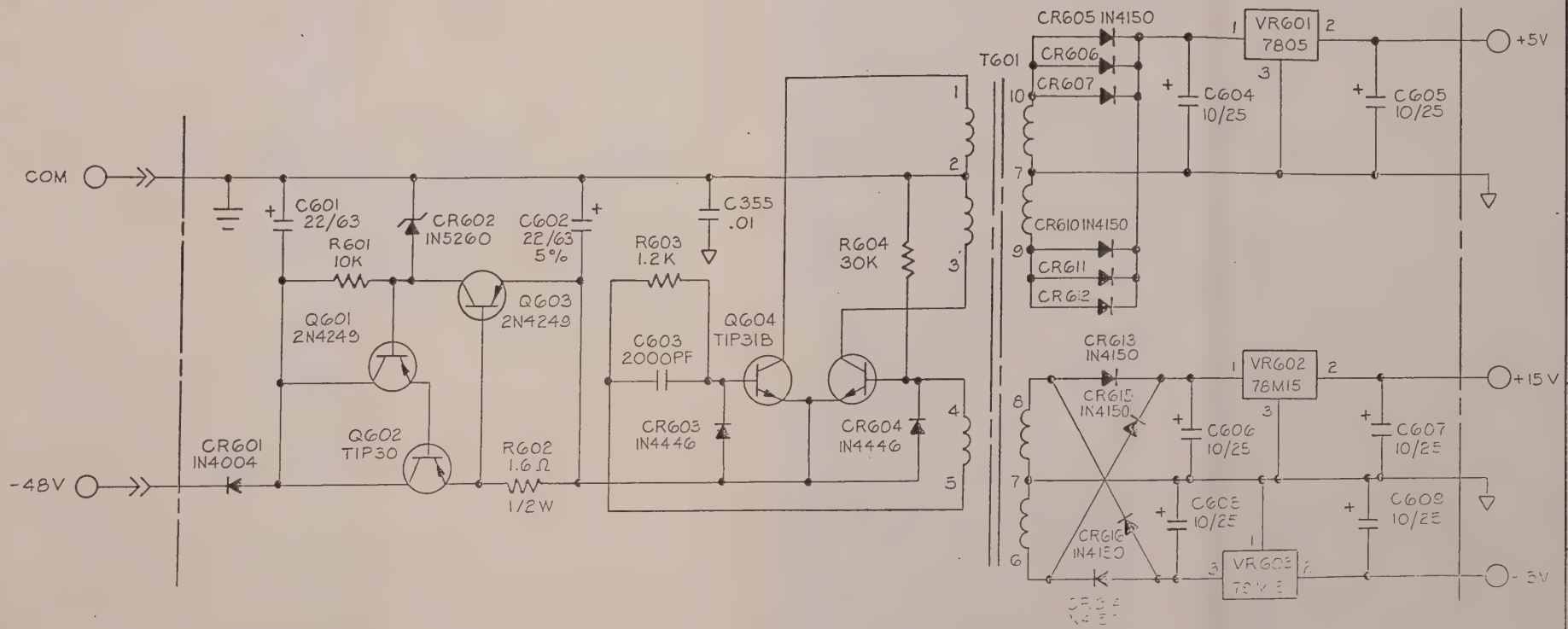
SCHEMATIC DIAGRAM
100R-5 NOTCH & B.P. FILTER

SCALE	SIZE	DRAWING NO.
NONE	B	80-6741-1009

DO NOT SCALE DRAWING — SHEET 9 OF 11

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



TOLERANCES UNLESS OTHERWISE SPECIFIED		
FRACTIONS	DEC	ANGLES
±	±	±

APPROVALS	DATE
DRAWN DLS	11-8-85
CHECKED	
ISSUE	

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SCHEMATIC DIAGRAM
100R-5 POWER SUPPLY(-48)

SCALE	SIZE	DRAWING NO.
NONE	B	80-6741 -1010

DO NOT SCALE DRAWING — SHEET 10 OF 11

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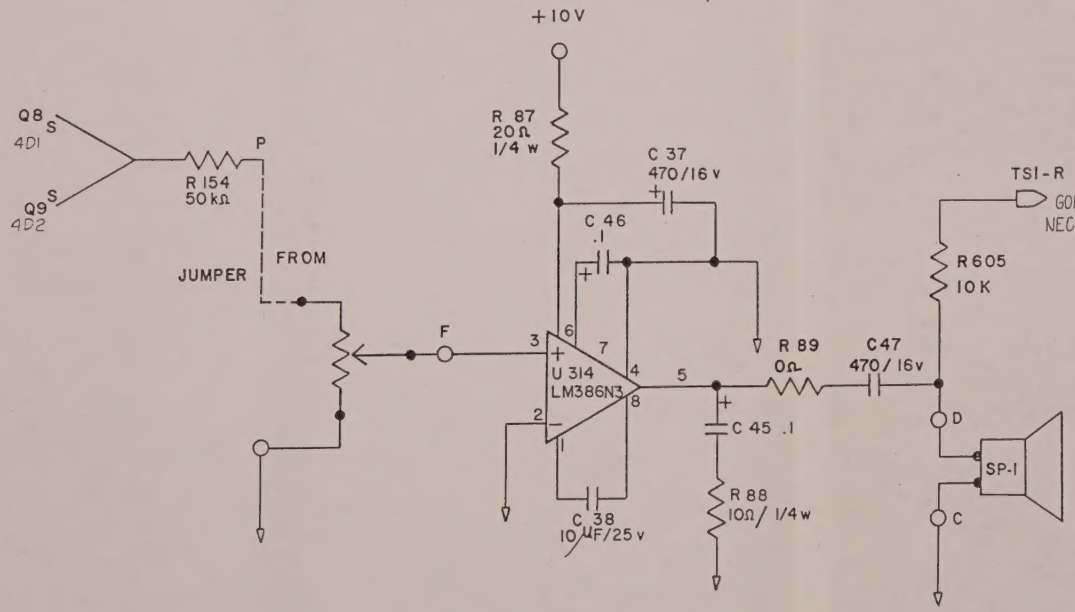
REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED



USED ON		
MODLE	DWG NO.	ISSUE
100R-5	80-6741-1009	
100P-4	: 6742 :	
ADC 1761	: 6741 :	
ADC 1763	: : :	

TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONS DEC ANGLES
± ± ±

APPROVALS	DATE
DRAWN DLS	5-7-85
CHECKED	
ISSUE	

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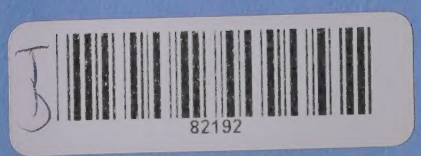
SCHEMATIC DRAWING
100R-5 AUDIO MONITOR CKT.

SCALE NONE | SIZE B | DRAWING NO. 80-6741-1009

DO NOT SCALE DRAWING | SHEET 11 OF 11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